

CLAIMS

1. A DNA chain having characteristic of increasing carotenoid production, and containing the nucleotide sequence which encodes the polypeptide having the amino acid sequence substantially described in SEQ ID NO: 1, or a DNA chain which hybridizes with said DNA chain.

2. A DNA chain having characteristic of increasing carotenoid production, and containing the nucleotide sequence which encodes the polypeptide having the amino acid sequence substantially described in SEQ ID NO: 2, or a DNA chain which hybridizes with said DNA chain.

3. A method for producing carotenoid characterized by introducing DNA chain described in one of claim 1 or 2 into carotenoid-producing microorganisms, culturing said transformed microorganism and obtaining higher carotenoid content in the culture broth and cells.

4. A method for producing carotenoid characterized by introducing DNA chain containing the nucleotide sequence which encodes the polypeptide having the amino acid sequence substantially described in SEQ ID NO: 3, or DNA chain which hybridizes with said DNA chain introducing to carotenoid-producing microorganism, culturing said transformed microorganism and obtainig higher carotenoid content in the culture broth and cells.

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